SCHWARZ
FORENSIC ENTERPRISES

December 12, 2012

Chief of Police Thomas Smith
St. Paul Police Department
367 Groves Street
St. Paul, MN SS101

Re: Assessment results of the Latent Print Comparison, Latent Print Processing and Crime Scene Units

Dear Chief Smith:

Schwarz Forensic Enterprises (SFE) is pleased to provide you with this attached report concerning our assessment of the St. Paul Police Department Latent Print Comparison, Processing and Crime Scene Units.

SFE was provided unfettered access to the unit personnel, documents, examination records and laboratory spaces from August 30th to September 19th, 2012 SFE interviewed all the unit personnel, examined unit work areas, reviewed a random sample of unit case work and examined unit documents.

This review provided insight into the quality of the work performed by the unit. On the basis of our review, we offer recommendations and requirements for the unit regarding the pursuit of future possible accreditation. This assessment was conducted by Matthew T. Schwarz and Frank Fitzpatrick.

Respectfully Submitted,

Matthew T. Schwarz, CLPE, CPES
President/CEO
Schwarz Forensic Enterprises, Inc.

Assessment of the Saint Paul Police Department's Crime Laboratory Quality System, Latent Prints and Crime Scene Investigation

1. Introduction and Observations

The Saint Paul Police Department Crime lab (SPPD-CL) was evaluated for the assessment of their current quality system and their needs for approaching an assessment from an external assessment hody against the International Standard ISO 17025, for the testing lahoratory functions and /or ISO 17020 for the crime scene investigation function. This assessment was conducted by inspection of facilities; review of policies, procedures, and records; and hy staff interviews. Additionally, Schwarz Forensic Enterprises (SFE) prepared portions of this report concerning the technical assessment of the Latent Print Comparison, Processing and Crime Scene Units.

The personnel appear to have attended relevant classes, seminars and training to perform their functions. The remainder of the training appears to be primarily on-the-job observation at crime scenes and latent comparison and processing. There is no formal competency testing and authorization. There is no formal program to assess on-going proficiency. Despite these deficiencies, **no evidence of erroneous identifications** by latent print examiners was found; but we did find numerous examples of cases wherein examiners had failed to claim latent prints as suitable for identification and/or to identify prints to suspects.

2310 SE Delaware Avenue, Suite G, #233 ▪ Ankeny, Iowa 50021-2310 USA ▪ www.SchwarzForensic.com ▪ toll-free: 877. SFE. 0770

The care and custody of the property entrusted into the custody of the Crime Lab appears secure. Evidence is received by hand, through a drop off locker system from officers, or from the department's property services. All the recovered firearms for the agency are funneled through the Crime Lab for safe rendering, fingerprint processing and collection of touch DNA and then returned to the department property services.

The evidence received in the Crime Lab appeared to be packaged, for the most part, so that it was sufficiently protected from cross-contamination, deleterious change or loss, however, little of the incoming evidence was sealed with tamper-evident tape. Outgoing evidence is properly sealed.

The facility appears to be serviceable. The processing room lacked a door hung on the existing opening which would increase security and safety for that room. The equipment is adequate for the procedures employed; however there is no evidence of maintenance of this equipment, including the fume hoods. Equipment which is not currently in use was not marked 'out of service'.

The department uses a paper-based evidence control system, and a copy of the property record, initiated by the evidence collector, accompanies the evidence. Internal transfers are memorialized in reports but there is no objective proof that the chain of evidence was properly documented contemporaneously. The department lacks a comprehensive, computerized property management system.

The SPPD-CL uses an older Microsoft Access®-based computer program for their laboratory information management system. This system is backed up by the Department IT staff. The rudimentary and antiquated system provides the capability to enter case information and results and includes reporting capability. It is a stand-alone system, not networked to other department functions.

Crime Lab report distribution to other units within the department is not well defined or provide a tracking mechanism.

The SPPD Crime Lab has outdated SOPs and there is no objective proof that these have ever been communicated to Staff. There is also a set of draft SOPs which have not been authorized. These SOPs would not meet the requirements of ISO 17025 or 17020 (see **Review of Draft Standard Operating Procedures**).

Deficiencies in the quality system includes a lack of document control, technical and quality management, control of non-conforming work, policies of corrective and preventative actions, control of technical reports, training, competency testing and on-going proficiency testing of personnel, systems of internal and external audits, record of validation of methods, control of equipment and other indicia of a quality system.

The Crime Laboratory lacks a Health and Safety program.

The Crime Laboratory lacks an updated Training Manual.

Given this set of circumstances, SPPD will require the complete development and implementation of a quality system in order to meet the International Standards.

2. International Standards

There are two International Standards relevant to forensic activities:

ISO 17025:2005 *General requirements for the competence of testing and calibration laboratories*, and ISO 17020:2012 *General criterio for the operation of various types of bodies performing inspection.*

ISO 17025 has been applied to all aspects of forensic activities, including latent prints and crime scene investigation. ISO 17020 is applicable to forensic activities involving "professional judgment" such as latent prints, crime scene investigation, video analysis, firearms analysis. ISO 17020 is not applicable to a testing activity such as Controlled Substance analysis.

Both International Standards (IS) are divided into two sections: Management Standards and Technical Standards. The Management Standards are modeled after ISO 9001 to ensure that management practices establish and maintain a demonstrable quality system. The Technical Standards are applicable to inspection activity to ensure that the product produced meets expected standards of quality.

3. Accreditation Body Options

There are currently three accreditation bodies (ABs) in the United States which provide accreditation services specifically geared for forensic testing and inspection activities.

ASCLD/LAB had accredited most crime labs in the United States (and some internationally) using a self-developed accreditation criteria, now referred to as the "Legacy Program". Since 2007, ASCLD/LAB has decided to accredit to the ISO 17025 standards and now requires that all of its client agencies accredit to this Standard.

ANSI-ASQ National Accreditation Board/ FQS was the first ISO 17025 accrediting body offering a program geared to forensic activities. FQS also offers ISO 17020 accreditation services.

A2LA (American Association for Laboratory Accreditation) is one of the oldest accreditation bodies in the United States. It has just begun offering ISO 17020 and ISO 17025 accreditation services to the forensic community.

In addition to assessing agencies to the requirements of the applicable International Standard, each AB also assesses the agency to additional requirements, called supplemental or additional requirements. Consult program documents of each AB for more information.

All three ABs are accredited by either the Asia Pacific Laboratory Accreditation Cooperation (APLAC) or the Inter-American Accreditation Cooperation, or both, which insures a level of international recognition to their accreditation programs.

Each Accreditation Body has its own policy, cost and schedule for assessments. AB policies include whether all activities within the scope of accreditation will need to be accredited at one time, or if individual activities can be assessed for accreditation as their quality system aspects are completed.

Some agencies have accredited their crime lab and crime scene unit under ISO 17025 and some agencies have chosen to bifurcate their accreditation whereby the crime lab testing function is

accredited under ISO 17025 and their crime scene investigation function is accredited under ISO 17020. A testing function such as controlled substances cannot be accredited under ISO 17020.

At this time, probable activities within a scope of accreditation would include latent prints; controlled substances and crime scene investigation. Other subcategories will need to be decided by SPPD. (see **Potential Scope of Accreditation Activities**).

The preparation and timeline to apply for ISO 17025 and/or 17020 accreditation is ultimately a question of the amount of resources brought to bear, either internally or externally, on the effort.

4. Preparation for ISO Accreditation

The preparation for a ISO 17025/17020 compliant quality system involves the adoption of management policies and procedures which meet all the clauses of ISO 17025/17020, meet generally accepted good laboratory practices, the specific supplemental or other requirements of the accrediting body and meet all applicable federal, state and local statutes.

In order to meet accreditation standards, a laboratory must demonstrate its ability to comply with requirements on a continuing basis.

Specific policies and procedures must be developed, documented and placed into practice. For ISO 17025, these include the following:

POLICIES

Policies must state the overall direction of the organization with regard to the subject activity.

ISO Clause	Description
4.1.5c	ensure the protection of its customers' confidential information
4.1.5d	avoid involvement in any activities that would diminish confidence in activities
4.2.2	policies related to quality, including a quality policy statement, shall be defined in a quality manual
4.4.1	policies for reviews leading to a contract must be defined
4.6.1	a policy for the selection and purchasing of services and supplies must exist
4.8	resolution of complaints received from customers or other parties must be made
4.9.1	control of nonconforming testing and/or calibration work must be defined
4.11.1	policy on corrective action must be defined
5.2.2	identifying training needs and providing training of personnel

PROCEDURES

Procedures must specify a way to perform an activity and must usually contain the purpose and scope of the activity, what shall be done and by whom, when, where and how it shall be done. The procedure must also address what materials, equipment and documents shall be used and how it sball be controlled and recorded.

4.1.5c	ensure the protection of its customers' confidential information
4.1.5d	avoid involvement in any activities that would diminish confidence in activities

4.3.1	establish and maintain procedures to control all documents that form part of its management system
4.3.2.2	establish and maintain procedures to control all documents, including subsections a-d
4.3.3.3	If the agency's documentation control system allows for the amendment of documents by hand pending the re-issue of the documents, the procedures and authorities for such amendments shall be defined.
4.3.3.4	procedures shall be established to describe how changes in documents maintained in computerized systems are made and controlled
4.4.1	procedures for these reviews leading to a contract must be defined
4.6.1	procedures for the selection and purchasing of services and supplies must exist
4.8	resolution of complaints received from customers or other parties must be made
4.9.1	procedures for control of nonconforming testing and/or calibration work
4.11.1	procedures for corrective action
4.12.2	Procedures for preventative action
4.13.1.1	establish and maintain procedures for identification, collection, indexing, access, filing, storage, maintenance and disposal of quality and technical records
4.13.1.4	establish procedures to protect and back-up records stored electronically and to prevent unauthorized access to or amendment of these records
4.14.1	conduct internal audits of its activities to verify that its operations
4.15.1	the agency's top management shall periodically conduct a review of the agency's mauagement system
5.2.2	identifying training needs and providing training of personnel
5.3.5	measures shall be taken to ensure good housekeeping in the agency
5.4.1	The agency shall use appropriate methods and procedures for all tests and/or calibrations within its scope
5.4.5.2	The agency shall record the results obtained, the procedure used for the validation, and a statement as to whether the method is fit for the intended use
5.4.6.1	a calibration agency, or a testing agency performing its own calibrations, shall have and shall apply a procedure to estimate the uncertainty of measurement for all calibrations and types of calibrations
5.4.6.2	testing agencies shall have and shall apply procedures for estimating uncertainty of measurement.
5.4.7.2	computer software developed by the user is documented in sufficient detail and is suitably validated as being adequate for use;
5.5.6	safe handling, transport, storage, use and planned maintenance of measuring equipment to ensure proper functioning and in order to prevent contamination or deterioration
5.5.10	intermediate checks are needed to maintain confidence in the calibration status of the equipment
5.5.11	tbe agency shall have procedures to ensure that copies (e.g. in computer software) are correctly updated
5.6.1	the agency shall have an established program and procedure for the calibration of its equipment.
5.6.3.1	the agency shall have a program and procedure for the calibration of its reference standards.
5.6.3.3	Checks needed to maintain confidence in the calibration status of reference, primary, transfer or working standards and reference materials shall be carried out

	according to defined procedures and schedules.
5.6.3.4	procedures for safe handling, transport, storage and use of reference standards and reference materials
5.7.1	a sampling plan and procedures for sampling when it carries out sampling of substances, materials or products for subsequent testing or calibration
5.7.3	have procedures for recording relevant data and operations relating to sampling that forms part of the testing or calibration that is undertaken
5.8.1	procedures for the transportation, receipt, handling, protection, storage, retention and/or disposal of test and/or calibration items
5.8.2	system for identifying test and/or calibration items
5.8.4	procedures and appropriate facilities for avoiding deterioration, loss or damage to the test or calibration item during storage, handling and preparation
5.9.1	quality control procedures for monitoring the validity of tests and calibrations undertaken.

Preparation for ISO accreditation requires a careful reading of the applicable standards. Some Clauses require a policy, some a procedure, some both, as outlined above. In some instances, the International Standard employs terms such as "arrangements" which implies the need for policies, procedures, practices or other activity.

Specific Detail enumerated in a single Clause

Some clauses require specific detail in a policy or procedure. For example, **Control of Records** Clause 4.13.1.1 *The agency shall establish and maintain procedures for identification, collection, indexing, access, filing, storage, maintenance and disposal of quality and technical records,* (emphasis added) requires that procedures shall be maintained for all the activities from identification through disposal of controlled quality and technical records.

Specific requirements specified in separate subsections

In other instances such as, **Management Reviews,** specific items for review are individually named:

4.15.1 In accordance with a predetermined schedule and procedure, the agency's top management shall periodically conduct a review of the agency's management system and testing and/or calibration activities to ensure their continuing suitability and effectiveness, and to introduce necessary changes or improvements. The review shall take account of:

the suitability of policies and procedures;
reports from managerial and supervisory personnel;
the outcome of recent internal audits;
corrective and preventive actions;
assessments by external bodies;
the results of interagency comparisons or proficiency tests;
changes in the volume and type of the work;
client feedback;
complaints;
recommendations for improvement;
other relevant factors, such as quality control activities, resources and staff training.

Procedures must address all of these elements, as well as being on a predetermined schedule, that is, a specific time during the year when this Management Review will take place.

5. Specific ISO Requirements requiring extensive documentation Development of a Document Control System.

ISO 17025 requires that there is a system of Document Control.

4.3.1 General

The laboratory shall establish and maintain procedures to control all documents that form part of its management system (internally generated or from external sources), such as regulations, standards, other normative documents, test and/or calibration methods, as well as drawings, software, specifications, instructions and manuals.

The Purpose of Document Control

Document control provides a framework for deciding how information is created in the organization and how it is managed once created.

The goal of document control is not to create extra work or build a bureaucracy. Instead, it is put in place to protect the value of the content of documents and to enhance the usefulness of that content to the people in the organization who need to use it.

To be "under control" means that all aspects of the document from creation, through distribution and revision, use and archiving, is performed in accordance with procedures set down by the management of SPPD.

Document control provides a framework for deciding how information is created in the organization and how it is managed once created. The purpose of a document control method is to ensure:

- Documents fulfill a useful purpose
- Resources are not wasted on the distribution of unimportant or useless information
- Only valid information is published
- Information is kept up to date
- Information is provided in a form that can be effectively used
- Classified, confidential, or proprietary information is restricted to the people who have a real need to access it
- Information is retained that could help solve a problem, improve opportunities, or avoid costly errors.

Document Control Procedures

The document management process put in place to support the policy should include procedures that define the development of documents. While these procedures should not be cumbersome, they should be explicit and detailed enough to provide clear direction as to how documents should be prepared. The procedures may include essential topics such as:

- How to plan new documents; authorization, funding, establishing need
- How to prepare new documents; who prepares them, how they are drafted, how drafts are maintained
- Standards for the format and content of documents, forms, diagrams
- Document identification conventions
- Version control conventions
- Dating conventions; date of review, date of approval, date of issue, date of distribution, date of revision
- Document review procedures; who reviews, evidence of review
- Document approval; who approves, evidence of approval
- Publication; what constitutes "publishing" a document
- Printing; who prints a document, restrictions to printing
- Distribution; how is a document distributed, who does it, who checks it
- Use of documents; limitations, unauthorized copying, access to files, marking printed copy
- Revisions; identifying a need; who makes revisions, review and approval process, how are changes marked
- Amending issued documents; who creates amendments, reviews and approval process, identification of amendments
- Storing documents; determining location, security, access and prevention of unauthorized changes, indexing, retrieval by users, restrictions concerning paper documents vs. electronic document files, authorized and unauthorized external distribution and republishing.

Adoption of Corrective/Preventative Actions Policies and Procedures

ISO 17025 requires policies and procedures for corrective and preventative actions.

4.11 Corrective action

4.11.1 The laboratory shall establish a policy and procedure and shall designate appropriate authorities for implementing corrective action when nonconforming work or departures from the policies and procedures in the quality system or technical operations have been identified.

4.12 Preventive action

4.12.1 Opportunities for needed improvements and potential sources of nonconformities, either technical or concerning the quality system, shall be identified.

Corrective action and preventive action (CAPA, also called corrective action / preventive action) are improvements to an organization's processes taken to eliminate causes of non-conformities or other undesirable situations. CAPA is a concept within good laboratory practice (GLP). It focuses on the systematic investigation of the root causes of non-conformities in an attempt to prevent their recurrence (for corrective action) or to prevent occurrence (for preventive action).

Corrective actions are implemented in response a problem or a non-conformance which can be identified internally through staff suggestions, management reviews, document reviews, internal audits, customer complaints, customer rejections, and non-conformities raised in external audits. Preventive actions are implemented in response to the identification of potential sources of non-conformity.

To ensure that corrective and preventive actions are effective, the systematic investigation of the root cause is required. Root cause analysis is to identify the cause of a discrepancy or deviation and suggest corrective actions to potentially prevent recurrence of a similar problem, or preventive action to ensure that discrepancies do not occur.

A common misconception is that the purpose of preventive action is to avert the occurrence of a similar potential problem. This process is all part of corrective action, because it is a process of determining such similarities that should take place in the event of a discrepancy.

Preventive action is any proactive methodology used to determine potential discrepancies before they occur and to ensure that they do not happen. Corrective and preventive actions both include investigation, action, review, and further action if so required.

All aspects of the investigation must be documented and form part of the laboratory's quality documents.

Provisions for Management Reviews

ISO 17025 requires periodic management reviews.

4.15.1 In accordance with a predetermined schedule and procedure, the agency's top management shall periodically conduct a review of the agency's management system and testing and/or calibration activities to ensure their continuing suitability and effectiveness, and to introduce necessary changes or improvements.

In ISO 17025, top management is crucial to the success of the quality assurance program by demonstrating their leadership and commitment to the accreditation process. Top management can be defined as a member of management within a chain of command including the laboratory function, and having substantial control over financial and personnel resources within the parent agency.

The management review is at least an annual event, on a predetermined schedule. It is perhaps best timed after the elements of the management reviews that are time-bound, e.g. internal audits, are completed.

The relevant Clause states that:

4.15.2 Findings from management reviews and the actions that arise from them shall be recorded. The management shall ensure that those actions are carried out within an appropriate and agreed timescale.

This would require that Top Management be engaged in the review process through some arrangement (staff meeting, email, presentation, etc.) and that, at least, the eleven elements required of a management review be included in that arrangement. If top management states that an action is to be taken as a part of this review, than that action must be recorded and an action

plan with a due date be established. In some instances, an action arising may be considered a non-conformity.

Calculations of Uncertainty of Measurement

ISO 17025 introduces the concept of uncertainty of measurement (UM) as an integral part of the accreditation of testing laboratories and inspections services (CSI). UM can be defined as a parameter characterizing the range of values within which the value of the measurand can be said to lie within a specified level of confidence. (from G104 - A2LA Guide for Estimation of Measurement Uncertainty In Testing).

Each accreditation body approaches UM slightly differently.

The FQS policy is reproduced below since it is not readily available from the FQS web site.

Agencies are required to have and apply procedures for estimating the uncertainty of measurement (UM) for all quantitative testing reported to customers (e.g. weight (mass), length)

New quantitative test procedures developed or non-Standard methods implemented by the agency must include estimates of UM or define the procedure to be used to measure UM.
The estimation of UM can be made by direct or indirect methods, but all factors that could contribute more than 10% to total UM must be identified and taken into consideration in the estimate.

Where the reported quantitative test result will be used either alone or with other information to determine conformity to a specification such as a requirement in a law or regulation, the agency must be able to show that the UM is such that it will not contribute significantly to the reported value.

> NOTE 1: Where there is a quantitative step in a test method that results in reporting of qualitative data, the laboratory must be able to show that the UM is such that it will not contribute significantly to the validity of the reported value.
>
> NOTE 2: Where professional judgment is used to give an opinion that includes a quantity (for example, firing distance determination made by a firearms examiner) but where no measuring device that can be calibrated has been employed to determine the quantity, then UM is not required provided that:
>
> - The report makes it clear that this is an opinion and not a measurement
> - The competence of the examiner can be established by records of training, proficiency testing and history of supervised and/or peer reviewed case work
> - The quantity is expressed with an upper and lower limit that is within the ranges generally accepted in the field for the test conducted
> - The quantity is not used to determine conformity to a specification

References

M H Ramsey and S L R Ellison (eds.) Eurachem/EUROLAB/ CITAC/Nordtest/AMC Guide: *Measurement uncertainty arising from sampling: a guide to methods and approaches* Eurachem (2007).

EURACHEM/CITAC Guide CG-4, *Quantifying Uncertainty in Analytical Measurement,* Second Edition, Editors S L R Ellison (LGC, UK) M Rosslein (EMPA, Switzerland) A Williams (UK)

ILAC G 17:2002. *Introducing the Concept of Uncertainty of Measurement in Testing in Association with the Application of the Standard ISO/IEC 17025*

NIST Technical Note 1297 "Guidelines for evaluating and expressing the uncertainty of NIST measurement results"

The policy for the American Association of Laboratory Accreditation UM can be found here: http://www.a2la.org/guidance/est_mu_testing.pdf.

The policy for the ASCLD/LAB Estimation of Measurement Uncertainty can be found here: http://ascld-lab.org/documents/AL-PD-3055.pdf.

6. Recommendations for Accreditation Implementation - Short and Intermediate timeframe

- Appoint a laboratory director who can act as a quality manager, or appoint a separate quality manager
- Prepare for accreditation to an International Standard by the development of policies, procedures and practices which meet the Standards and other supplemental or additional requirement for accreditation. Use internal and/or external resources.
- Train staff in audit principles
- After a few months after implementation of a quality system, contract for an external entity to perform a "gap" analysis. This audit is designed to reveal any "gaps" between the requirements of ISO/IEC 17025/17020, any amplifications documents, any legal requirements, and your own adopted policies and procedures
- Schedule an initial assessment

Long term timeframe

- Develop a computerized system for tracking case records, and evidence. Ideally the evidence portion of the system would interface into a Department's records management system.
- Develop a statistical reporting system so that management will be aware of trends and changes in caseloads and type of cases.

7. Assessment results of the Latent Print Comparison, Latent Print Processing and Crime Scene Units

Schwarz Forensic Enterprises (SFE) prepared these summary comments concerning the technical assessment of the St. Paul Police Department Latent Print Comparison, Processing and Crime Scene Units. SFE was provided access to the unit from August 30th to September 19th, 2012. SFE

interviewed unit personnel, toured unit facilities, reviewed a random sample of unit case work and examined unit documents. The review was sufficient to allow us to offer the observations contained in this document.

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We found **no evidence of erroneous identifications** by latent print examiners, but we found numerous examples of cases wherein examiners had failed to claim latent prints as suitable for identification and/or to identify prints to suspects. Unit personnel were cooperative during this process and displayed professionalism at all times.

A. Case Review

SFE reviewed a total of 246 randomly selected latent print comparison cases. It should be noted that the unit recently started retaining latent lifts that were determined to be of no value. Prior to this recent change any lift that was determined to be of no value for identification purposes was destroyed. Although a past practice of many laboratories this is not considered to be a currently accepted method and, as will be detailed below, the destruction of prints (even those thought to be unsuitable) is strongly discouraged.

Out of the 246 cases reviewed, 103 cases (41.87%) were found to contain deficiencies that were not erroneous identifications, but which were determined to be seriously deficient work. These errors consisted of two types. 1) Additional latent prints of value were located where none had beeu reported. 2) These additional latent prints, or latent prints that had previously been reported as "negative", "not made by", or excluding a subject, were subsequently identified to the same or different subject previously compared on the case.

Regarding the discovery of so many additional latent prints of value, it must be stressed that the statistics are based upon the examination of only those latent print lifts which had been retained. The error rate could be appreciably higher if all latent print lifts had been retained.

A total of 92 cases (37.40%) contained additional latent prints of value and in 56 cases (22.76%), the latent prints, located within the case file that were previously reported as not identified, were identified to subjects originally listed in the latent print examination requests.

B. Management

The unit supervisor did not have any certification in the identification of latent prints. The supervisor's last documented training of significance in the field occurred in 2001. There were no established goals for training, continual improvement plans, or for certification of unit personnel.

There was no evidence of unit testing for competency prior to the release of personnel for case work examination, nor were any proficiency tests administered on a periodic basis. The technical case review process consisted of the unit supervisor adding his signature to the case report. There was no objective evidence that the case work had actually beeu examined nor did the evidence

indicate that the conclusions of the examiner had been verified employing correct ACE-V methodology. Due to the complete lack of annotation of actions taken during the original examination process, it is difficult to determine the examination processes, including what work was attempted or accomplished.

The unit supervisor is reported to have reviewed all incoming cases to determine which, if any, of these cases contained latent prints suitable for identification. If the supervisor determined that prints were not suitable for identification, those lifts were then destroyed. There was no established procedure to verify this determination prior to destruction.

There were no standard operating procedures for the unit. Some procedures existed in draft form but had not been adopted by command staff and other procedures were over 10 years old and not known to the staff. The draft procedures were inadequate in that they afforded substantial discretion to personnel and did not require documentation of the reason for any deviation from policy.

C. Field Collection of Latent Prints

Latent prints are collected by patrol and investigative personnel in the course of their normal duties. There is no established system to ensure competence in the collection of latent prints. Latent prints are almost exclusively collected by using white powder, clear lift tape and transparent acetate backers. There are numerous other methods and materials available which are much more likely to result in success. There is no requirement to document specifics about a given print's location or orientation. There is no protocol for the labeling of the latent print lifter with a unique identifier so that the latent print lifter can be followed through the identification process. In 21 of the cases (8.54%) reviewed there were no markings to associate the lift to a specific case if ever separated from the outer envelope used for transportation of the latents.

D. Physical Layout of Unit

The unit is located in a space with adequate access control. There is insufficient space for each examiner to have a separate, private work area for the comparison of latent print evidence. The layout of the latent print processing rooms causes multiple trips between rooms during the process with the evidence. There is no established clean area designated for the initial review and collection of any potential DNA, Biological and/or Trace evidence.

E. Safety

The unit does not have material safety data sheets (MSDS) information about chemicals used in the laboratory, although this information is readily available through the internet. MSDS are OSHA requirements and provide personnel necessary information to use a chemical in a safe manner. Unit personnel were unable to articulate the safety considerations of the chemicals present in the unit. There was no ventilation provided for the Cyanoacrylate process which constitutes inhalation hazards. There was no evidence that ventilation equipment present in the unit had been properly maintained. There was no protocol in place to conspicuously label evidence which presented a biological hazard and no specific crime laboratory policy to use personal protective equipment when handling such evidence. There were no eye wash stations located within the Latent Print

Processing area where chemicals are handled and used regularly. The Latent print processing area does not have a door separating the processing area from the office area to increase security and safety of personnel and evidence.

F. Processing and Identification of Evidence

A review of a random sample of cases demonstrates that the unit successfully identifies latent prints, but only in cases wbere the print detail is of extraordinarily high quality. The vast majority of prints submitted to the unit are characterized as not identifiable. SFE was able to find numerous other identifiable prints in the cases which were previously examined. It should be noted that these were cases in which at least one print had already been identified. A major deficiency in the unit's protocol is that in cases where no print is determined to be identifiable the latent print lifts are discarded. It is impossible to judge, therefore, the degree to which the unit fails to find identifiable prints.

The unit fails to appropriately use digital imaging technology to identify prints – particularly in combination with the usage of an alternate light source. There was no established procedure to photograph latent prints during chemical processing. The processing unit also has a practice to retain only suitable for comparison latents prints of very high quality, thereby failing to capture and compare other suitable prints.

SFE observed numerous instances where evidence processing was performed without regard to published methodology and best practices. As an example, unit personnel bad been incorrectly trained in the use of a particular chemical processing technique. The result was that the process took a minimum of three hours to complete just one step in the process when a correctly trained technician would have been able to process the same evidence in approximately ten minutes.

G. Reports

The unit's reports were largely unintelligible. Due to the lack of a protocol for the labeling of prints collected in the field there was no coherent methodology to organize results in the reports. As an example, the report could only describe a latent print as having been recovered from the "outside" of a motor vehicle, with no other location information available. There were no established protocols for the distribution of reports to persons other than the requesting officer.

The reported results in the latent print comparison reports were unclear and the conclusion of "Negative" had several definitions that were not specifically clarified when used. The different definitions ranged from "The subject was excluded" to "need better known prints". The respective meanings of these different conclusions can seriously affect the importance attached to the evidence.

The reports did not clearly identify the examiner who had performed the actual case work and the examiner who had condncted a verification of the reported work product. This confusion was also observed in Crime Scene reports.

H. Digital Imaging

All the digital images taken by the St. Paul Crime Laboratory Latent Print Processing, Comparison and Crime Scene Units are stored on a standalone desk top computer with no regularly scheduled backups. There is no policy or procedures to control the handling, labeling, storing and use of these images. These images are not readily available for examiners unless they leave their work area and go to this one computer to access the data. There is also no meaningful documentation or tracking of the number of digital images taken of evidence or at crime scenes. All the files are open for deletion, edit and movement by any user accessing the terminal. The terminal is not password protected. The unit is currently in the process of moving the images to a server within the SPPD network, however many image case files are at risk of loss.

Multiple incompatible digital camera systems are used and photographs have been lost and had to be re-taken when using the same memory card between two different camera systems.

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---------- End of Report ----------

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Saint Paul Police Department Quality System

Review of Draft Standard Operating Procedures

A draft of SOPs was reviewed for potential compliance with the ISO 17025 standard. The Controlled Substance section was not reviewed. The sections reviewed were in the following areas:

Fingerprint Examination
Video Analysis
Biological and Trace Examinations
Crime Scene Photography
Miscellaneous SOPs

Additionally there were appendices to the SOPs.
Appendix A – Equipment
Appendix B – Reagents
Forms

These SOPs have not been implemented and exist in draft form.

There is a numbering scheme for SOPs indicating various sections designated as a SPPD-CL-###, where the sections are given different lead numerals, i.e. Controlled Substances - 200s, Fingerprint Examinations - 300s, etc.

There is an authorization page for the Laboratory Director's signature.

General Comments

Each SOP has a footer which says, in part, *"Methods used in the lab are often modified at the discretion of the examiner..."* This does not conform to Clause 5.4.2 Selection of methods, which says in part:

> *The laboratory shall confirm that it can properly operate standard methods before introducing the tests or calibrations.* ***If the standard method changes, the confirmation shall be repeated.*** (emphasis added)

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Changes to the method must be controlled, deliberate and adequately validated before use on evidence.

In another part of Clause 5.4.2 it states

> *When the customer does not specify the method to be used, the laboratory shall select appropriate methods that have been published either in international, regional or national standards, or by reputable technical organizations, or in relevant scientific texts or journals, or as specified by the manufacturer of the equipment.*

The draft SOPs do not refer to appropriate scientific journals as reference for the methods. It should be noted that these scientific references could also be present in Training or other Manuals deemed appropriate by the laboratory. The importance of appropriate references is to ensure that the method used is adequate for the task at hand and to provide a basis for troubleshooting any problems that may arise in the conduct of an examination.

Draft SOPs have a **Safety Considerations** section which does not adequately address the specific potential dangers in using certain chemicals, especially volatile chemicals. Significant information from MSDSs is not included here.

Draft SOPs lack information on quality control testing requirements or other performance checking processes to be performed to the reagent prior to use.

Equipment Detail listed in Appendix A does not meet all the elements of the Clause 5.5.5

5.5.5 Records shall be maintained of each item of equipment and its software significont to the tests ond/or calibrations performed. The records shall include at least the following:

a) the identity of the item of equipment and its software;

b) the manufacturer's name, type identification, and serial number or other unique identificotion;

c) checks that equipment complies with the specification (see 5.5.2);

d) the current location, where appropriate;

e) the manufacturer's instructians, if available, or reference to their location;

f) dates, results and copies of reports and certificates of all calibrations, adjustments, acceptance criteria, and the due date of next calibration;

g) the maintenance plan, where appropriate, ond maintenance carried out to date;

h) any damage, malfunction, modificatian or repair to the equipment.

Much of the detail in the individual equipment sheets is notated "Refer to Operations Manual", and not included in the equipment sheet. When temperature values are included in the SOP e.g. "Heat DFO oven to 200°F degrees", there is no tolerance to this specific temperature. There is also no SOP for conducting performance checks on equipment such as ovens, refrigerators.

Draft SOPs do not contain reagent preparation formulas. These are in Appendix B.

The information in the Appendix B doesn't usefully address Expiration Dates, fails to specify the accuracy of measurements to be used, and nature of measuring equipment to use (graduated cylinder versus beaker versus volumetric flask).

The reagent formulas do not properly refer to the appropriate scientific journals as justification for the formulations.

There is no discussion about the use of positive controls to insure the correct mixing of the reagent prior to use.

There is no Physical Developer reagent sheet.